

REMARKS

The present invention relates to a liquid crystal display device and a method for manufacturing the same wherein the device employs columnar spacers (projections) for maintaining a gap into which liquid crystal is injected constant.

As described in the specification beginning at page 1, line 6, processes for making liquid crystal display devices employing such projections have been problematical, and solutions to such problems have been suggested, but they are also problematical.

Applicants successfully address problems of the prior art with the present invention, which is described in the specification as comprising three different embodiments.

In Embodiment 1, and as reflected in, for example, Claim 1, "an area occupying ratio of the projections with respect to a region enclosed by the sealing material is not less than 0.001 and not more than 0.003." See also the specification at page 8, line 18 through page 13, line 14.

Embodiment 2 relates to a pressurized sealing process, meaning that the liquid crystal display device undergoes a pressurizing process simultaneously with sealing the liquid crystal injection inlet with a sealing agent, as described in the specification at page 13, line 16 through page 17, line 2. In this embodiment, the pressure is not less than 20,000 Pa and not more than 40,000 Pa, as reflected in, for example, Claim 8. An alternative or complementary embodiment of Embodiment 2 involves time elapsed from completion of injecting liquid crystal up to sealing the injection inlet. This aspect is reflected in, for example, Claim 10. Preferred is a specified time of not less than 30 minutes and not more than 60 minutes, as reflected in Claim 11.

In Embodiment 3, spacers of different height are disposed, as reflected in, for example, Claim 5, and as described in the specification at page 17, lines 4-25. Preferred height differences are recited in, for example, Claims 6 and 7.

The significance of the limitations of above-discussed Embodiments 1-3 is reflected in the comparative data of record, i.e., Examples 1-13, as described in the specification at page 18, lines 2-6.

Examples 1-4 relate to Embodiment 1. Examples 1 and 2 are according to the invention. Example 3, with an area occupying ratio of 0.0048, and Example 4, with an area occupying ratio of 0.0059, are outside the terms of the present claims. According to the high temperature test described in the specification at page 18, last paragraph, no or hardly any display blurs were observed for Examples 1 and 2, while some or remarkable display blurs were observed in Examples 3 and 4. In addition, bubbles were generated in the low temperature test, described in the specification at page 18, last paragraph, in Example 4.

Examples 5-7 relate to Embodiment 2, wherein the only variable was pressure at the time of applying the sealing agent. Example 5 employed no pressure; Example 6 employed a pressure of 20,000 Pa; and Example 7 employed a pressure of 49,000 Pa. Example 5 produced display blurs were observed during the high temperature test. Example 7 produced bubbles during the low temperature test. In Example 6, the only example within the terms of the present invention, neither blurs nor bubbles were observed.

The above-discussed alternative or complementary embodiment of Embodiment 2 is demonstrated in Examples 8-11, wherein the only variable was time elapsed from completion of injecting liquid crystal up to sealing the injection inlet. Example 8, wherein the time elapsed was 0 minutes, and Example 11, wherein the time elapsed was 120 minutes, were both outside the terms of present Claim 11; bubbles were generated during the low temperature test and display blurs during the high temperature test, respectively. On the other hand, and within the terms of Claim 11, Example 9, which employed an elapsed time of 30 minutes, and Example 10, which employed an elapsed time of 60 minutes, both resulted in neither display blurs nor bubbles.

Embodiment 3 is demonstrated by Examples 12 and 13. In Example 12, the height of the columnar spacers were 3.4 μm and 3.6 μm , and are thus according to Embodiment 3. In Example 13, the heights were the same, and are thus outside the terms of Embodiment 3. In Example 12, no display blurs were observed. In Example 13, slight display blurs were observed during the high temperature test.

Applicants describe the results from the above-discussed comparative data, in the specification at page 25, line 26, through the end of page 26, as follows:

As explained so far, according to the first aspect of the present invention [i.e., Embodiment 1], it is possible to obtain a liquid crystal display device free of display blurs at the time of using the same in a high temperature condition and with which no bubbles are generated when using the same in a low temperature condition by setting the area occupying ratio for the columnar spacers to be an optimal value.

According to the second aspect of the present invention [i.e., Embodiment 3], it is possible to further secure an amount of compressive deformation for the columnar spacers since heights of columnar spacers are varied, and thereby to obtain a liquid crystal display device free of display blurs at the time of using the same in a high temperature condition and with which no bubbles are generated when using the same in a low temperature condition.

According to the third aspect of the present invention [i.e., Embodiment 2], it is possible to obtain a liquid crystal display device in which display blurs at the time of using the same in a high temperature condition might be restricted by performing a pressurized sealing process.

According to the fourth aspect of the present invention [i.e., alternative or complementary embodiment of Embodiment 2], it is possible to obtain a liquid crystal display device free of display blurs at the time of using the same in a high temperature condition and with which no bubbles are generated when using the same in a low temperature condition by the arrangement of sealing the injection inlet of the liquid crystal display device by means of a sealing agent after a specified time has elapsed after completion of injecting liquid crystals.

The above-discussed comparative data was relied on and pointed out to the Examiner in the amendment filed April 4, 2003, yet the Examiner has, in effect, ignored this data in the present Office Action. The Office Action is thus incomplete, and not in compliance with 37

C.F.R. § 1.104(b), which requires, *inter alia*, that the Examiner's action "will be complete as to all matters" (emphasis added). For this reason, and other reasons discussed below, the finality of the Office Action is improper.

The rejection of Claims 1-4 under 35 U.S.C. § 103(a) as unpatentable over U.S. 5,978,061 (Miyazaki et al), is respectfully traversed. Miyazaki et al discloses a liquid crystal display device wherein "[f]or actualizing the substrate-to-substrate distance of approximately 1-10 (μm) that the normal liquid crystal display device needs to have, it is required that a sum of sectional areas of the surfaces of the spacers, parallel to the substrates, which occupy per a square millimeter, should exceed 0.00002 square millimeter, but be less than 0.005 square millimeter" (column 19, lines 44-50). The above description is with regard to a twelfth and thirteenth embodiment of Miyazaki et al (column 19, line 27 ff). Miyazaki et al exemplifies the twelfth and thirteenth embodiment with a sum of sectional areas of 0.0009 square millimeter (column 20, line 24). In a fourteenth embodiment, Miyazaki et al exemplifies a sum of sectional areas of 0.0007 square millimeter (column 21, line 63). Miyazaki et al thus exemplifies no sum of sectional areas within the presently-recited range of, for example, Claim 1, but exemplifies a number of sum of sectional area values below the presently-recited minimum of 0.001. In addition, above-discussed Example 3, which is within the range disclosed in Miyazaki et al, nevertheless, is shown to be inferior to the invention as claimed herein. In effect, Applicants have demonstrated unexpected results relative to the range disclosed in Miyazaki et al who, in effect, suggests equivalents for all values within their disclosed range. See *In re Woodruff*, 16 USPQ 2d 1934 (Fed. Cir. 1990) (copy enclosed).

As discussed above, in view of the statutory requirement that the invention as a whole be considered, the Examiner may not ignore this evidence. For all the above reasons, it is respectfully requested that this rejection be withdrawn.

The rejection of Claims 5-7 and 14-17 under 35 U.S.C. § 103(a) as unpatentable over Miyazaki et al in view of U.S. 6,525,799 (Fukuda) is respectfully traversed. The disclosures and deficiencies of Miyazaki et al have been discussed above. Fukuda does not remedy these deficiencies. The Examiner relies on Fukuda as disclosing that the peak height of spacers are in the range of 0.05 to 0.50 μm . The Examiner, however, incorrectly relies on this disclosure as disclosing or suggesting a difference in heights of respective spacers therein. Rather, with respect to this range of peak heights, Fukuda discloses that there seems to be an optimum range in the peak height (column 5, lines 24-25). Thus, Fukuda suggests, in effect, that all of the spacers have the optimum peak height. In other words, Fukuda neither discloses nor suggests variance in height of individual spacers. Accordingly, it is respectfully requested that this rejection be withdrawn.

The rejection of Claims 8, 10-11 and 19-20 under 35 U.S.C. § 103(a) as unpatentable over JP10-104642 (Miyazaki Ryuji) in view of U.S. 6,275,280 (Kajita et al), is respectfully traversed. Miyazaki Ryuji discloses preparing a liquid crystal panel by applying a sealing resin near a liquid crystal injection port while maintaining a liquid crystal extruding pressure, then dropping the pressure down to a resin withdrawing pressure, which according to Miyazaki Ryuji, obviates the occurrence of a sealing error, has excellent uniformity of the gap between substrates and is strong to an external press without the occurrence of display unevenness. Kajita et al discloses application of a pressure of about 10,000 to 100,000 Pa to the substrates while sticking them together to produce a liquid crystal display device (column 3, lines 57-61). However, Kajita et al does not disclose the time of application of pressure. Thus, it is not clear at what step this pressure is applied, and it is not clear that this step coincides with the step in Miyazaki Ryuji. Even if it did, note that the application of pressure of the present claims is in reference to a pressurized sealing process in which the liquid crystal display device undergoes a pressurizing process simultaneous with sealing the liquid

crystal injection inlet with a sealing agent, as described in the specification at page 14, lines 21-27. Nevertheless, even if Miyazaki Ryuji and Kajita et al were both drawn to such a pressurized sealing process, the above-discussed comparative data of record demonstrates the significance of the presently-recited range of 20,000-40,000 Pa. Indeed, Example 7, which is within the range of Kajita et al, but outside the presently-recited range, results in bubbles during the low temperature test. Under *Woodruff, supra*, the present claims are patentable for this reason also.

For all the above reasons, it is respectfully requested that the above rejection be withdrawn.

The rejection of Claim 9 under 35 U.S.C. § 103(a) as unpatentable over Miyazaki Ryuji in view of Kajita et al, and further in view of JP59-078320 (Ogura Makoto), is respectfully traversed. The disclosures and deficiencies of Miyazaki Ryuji and Kajita et al have been discussed above. Ogura Makoto does not remedy these deficiencies. Ogura Makoto discloses sealing the injection opening of a liquid crystal cell with a sealing material. However, this disclosure does not remedy the above-discussed deficiencies in the combination of Miyazaki Ryuji and Kajita et al. Accordingly, it is respectfully requested that this rejection be withdrawn.

The rejection of Claims 23 and 24 under 35 U.S.C. § 103(a) as unpatentable in view of Miyazaki Ryuji in view of Fukuda, and further in view of Miyazaki et al and further in view of Kajita et al, is respectfully traversed. The disclosures and deficiencies of all of the above-applied references have been discussed above. Nothing in their combination remedies any of the above-discussed deficiencies. Accordingly, it is respectfully requested that this rejection be withdrawn.

The rejection of Claim 18 under 35 U.S.C. § 103(a) as unpatentable over Miyazaki Ryuji in view of Kajita et al, and further in view of Ogura Makoto, is respectfully traversed.

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The reasons of traversal are identical to those for the rejection of Claim 9 over the same combination of references. Accordingly, it is respectfully requested that this rejection be withdrawn.

Applicants respectfully traverse the finality of the Office Action. First, as discussed above, the Office Action is incomplete. Second, while Applicants' amendment may have necessitated some new grounds of rejection, it did not necessitate every such ground. Newly-applied Fukuda has been applied in order to meet the limitations of at least Claim 5, i.e., wherein the heights of the projections are varied. However, this limitation was present in original Claim 5. Thus, if the Examiner believed that Fukuda was relevant to this limitation, it should have been applied in the last Office Action on the merits. According to MPEP § 706.07(a), "A second or any subsequent action on the merits in any application . . . will not be made final if it includes a rejection, on newly cited art, . . . of any claim not amended by Applicant . . . in spite of the fact that other claims may have been amended to require newly cited art."

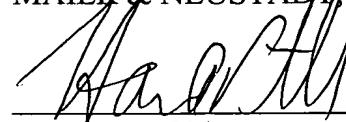
Accordingly, it is respectfully requested that the finality of the action be withdrawn, and that the present amendment be entered as a matter of right.

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All of the presently pending claims in this application are now believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Respectfully submitted,

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In re Woodruff (CA FC) 16 USPQ2d 1934

In re Woodruff

**U.S. Court of Appeals Federal Circuit
16 USPQ2d 1934**

**Decided November 20, 1990
No. 90-1095**

Headnotes

PATENTS

1. Patentability/Validity - Obviousness - In general (§ 115.0901)

JUDICIAL PRACTICE AND PROCEDURE

Procedure - Judicial review - Standard of review - Patents (§ 410.4607.09)

Patent and Trademark Office's obviousness determination is reviewed de novo on appeal, while factual findings are reviewed under clearly erroneous standard.

PATENTS

2. Patentability/Validity - Obviousness - Relevant prior art - Particular inventions

(§ 115.0903.03)

Patentability/Validity - Obviousness - Evidence of (§ 115.0906)

Claimed method of preserving refrigerated fruits and vegetables is obvious in view of prior art method for preventing deterioration of refrigerated vegetables, even though application discloses new benefit of fungal growth inhibition and slightly different range of carbon monoxide concentrations used in atmosphere in which fruits and vegetables are stored, since benefit of preventing fungal growth is at least generically encompassed within prior art's purpose of preventing deterioration of leafy and head vegetables, and since applicant's test results fail to establish that carbon monoxide concentration range claimed in application achieves unexpected results relative to prior art range and that claimed range is therefore critical to fungal growth inhibition.

Case History and Disposition:

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Appeal from the U.S. Patent and Trademark Office, Board of Patent Appeals and Interferences.

Patent application of Richard E. Woodruff, serial no. 741,610 (method for inhibiting fungal growth on fresh fruits and vegetables). From decision of Board of Patent Appeals and Interferences upholding examiner's rejection of claims 27-34, applicant appeals. Affirmed.

Attorneys:

Patrick F. Bright, of Bright & Lorig, Los Angeles, Calif., for appellant.

Richard E. Schafer, associate solicitor (Fred E. McKelvey, solicitor, with him on brief), for appellee.

Judge:

Before Rich and Plager, circuit judges, and Conti, senior district judge (Northern District of

California, sitting by designation).

Opinion Text

Opinion By:

Rich, J.

Woodruff appeals from the September 7, 1989 decision of the Patent and Trademark Office (PTO) Board of Patent Appeals and Interferences (Board), Appeal No. 86-2814, affirming the rejection of claims 27-34 in Ser. No. 741,610 as unpatentable under 35 U.S.C. §103. We affirm.

BACKGROUND

Woodruff's patent application is entitled "Method for Inhibiting Fungal Growth on Refrigerated Fresh Fruits and Vegetables." It discloses that the growth of fungi on fresh fruits and vegetables can be greatly reduced by storing the vegetables in a specified modified atmosphere. This atmosphere differs from ordinary air primarily in the decrease in the amount of oxygen present and an increase in the amount of carbon monoxide.

Although claims 27-34 are appealed, we need consider only independent claims 27 and 31 since Woodruff does not here argue, nor did he argue to the Board, that the dependent claims are separately patentable. Claim 27 reads:

27. A process for inhibiting the growth of fungi on fresh leafy and head vegetables comprising maintaining said fresh leafy and head vegetables in modified gaseous atmosphere including carbon dioxide in an amount from 0 to about 20% by volume, molecular oxygen in an amount of about 1% to about 20% by volume, carbon monoxide in an amount of about 3% to about 25% by volume, with the remainder being substantially all molecular nitrogen, for a time sufficient to inhibit the visible growth of fungi on said fresh leafy and head vegetables, and at a temperature in the range of about 29°F. to about 60°F.

Independent claim 31 differs from claim 27 only in stating the carbon monoxide limitation to be "in an amount of more than 5% to about 25% by volume."

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The sole reference relied upon by the Board in rejecting the appealed claims is U.S. Patent No. 3,453,119 to McGill (McGill patent) which is directed to a method of storing fresh leafy and head vegetables (such as lettuce) in order to "maintain their fresh appearance ... even over extended periods of time." The disclosure indicates that the method retards "deterioration changes on storage including respiratory deterioration changes, bacterial deterioration changes and other enzymatic deterioration changes." Like Woodruff's method, McGill's method consists of storing the vegetables in a modified atmosphere and at a lower temperature. The following is

a comparison of the atmospheres and temperatures claimed in Woodruff's application and those disclosed in McGill (in approximate percent by volume).

| Woodruff | Woodruff | McGill |
|------------------------|------------------------|------------------------|
| Claim 27 | Claim 31 | Patent |
| 0-20% CO ₂ | 0-20% CO ₂ | 0-5% CO ₂ |
| 1-20% O ₂ | 1-20% O ₂ | 1-10% O ₂ |
| 3-25% CO | >5-25% CO | 1-5% CO |
| balance N ₂ | balance N ₂ | balance N ₂ |
| 29-60° F | 29-60° F | 32-40° F |

As can be seen, except for the carbon monoxide concentration, all of the ranges of gas concentrations and temperature set forth in the McGill patent are completely within those recited in claims 27 and 31. With respect to the CO concentration, there is an overlap between the percentages of the McGill patent and claim 27, while the percentages of the McGill patent and claim 31 are roughly contiguous.

Woodruff presented a number of declarations to the PTO in support of his contention that the claims are not rendered obvious by the McGill patent. A declaration by reference-patentee Dr. John N. McGill states that his patent does not teach that fungi are a problem in leafy and head vegetables. Dr. McGill further states that at the time he was doing the research which formed the basis of the McGill patent, he was concerned only with bacteria control and the prevention of "butt-end discoloration" of lettuce, and made no observations as to the growth or lack of growth of fungi on lettuce. This latter contention is supported by selected pages from Dr. McGill's assistant's laboratory notebook. Dr. McGill's declaration also states that, in his opinion as an expert in the field, "processes that control bacteria and slime in leafy head vegetables do not necessarily control fungi and vice-versa," and that the McGill patent "does not teach or suggest to one of ordinary skill in the relevant art how to control fungi in leafy and head vegetables." Dr. McGill's declaration is corroborated by Dr. John H. Silliker, another expert in the art, and by Mr. James R. Lugg, the president of TransFRESH Corporation. 1

Woodruff also presented the declaration of Mr. Laurence D. Bell, another TransFRESH employee. Mr. Bell conducted tests comparing the fungi-inhibiting qualities of processes within the scope of claims 27 and 31 with the commercial embodiment of McGill's method used by TransFRESH. According to this declaration, TransFRESH employs a method of storing fresh vegetables wherein the initial concentration of carbon monoxide is about 4.5%, but is allowed to diminish significantly over the first few days of storage. The declaration shows that for 7 and 14 day test periods, the methods within the scope of claims 27 and 31 were much better at preventing fungal growth than was the commercial embodiment of McGill's method.

In affirming the rejection of claims 27-34 under 35 U.S.C. §103, the Board focussed on the teaching in the McGill patent of "inhibiting deterioration generally," noting that it was well-known in the art that fungi cause deterioration in leafy vegetables such as lettuce. The Board also relied heavily on a statement in the McGill patent that leafy vegetables may be stored in the

disclosed modified atmosphere "for as much as 14 days without substantial loss in appearance," noting that fungal growth would certainly have an adverse impact on the appearance of leafy vegetables. Finally, the Board considered each of the declarations submitted by Woodruff, but concluded that these were insufficient to overcome the rejection.

OPINION

[1] At the outset, we note that we review an obviousness determination by the PTO *de novo*, *In re De Blauwe*, 736 F.2d 699, 703, 222 USPQ 191, 195 (Fed. Cir. 1984), while our review of factual findings is under the clearly erroneous standard. *In re Caveney*, 761 F.2d 671, 674, 226 USPQ 1, 3 (Fed. Cir. 1985).

We first look to determine the differences between the claimed invention and the prior

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art. Claims 27 and 31 are process claims comprising the single step of maintaining vegetables in a specified atmosphere for a specified time (a time sufficient to inhibit the visible growth of fungi).

The atmospheres recited in claims 27 and 31 are anticipated by the atmosphere taught in the McGill patent except for the overlapping or adjacent ranges of carbon monoxide concentration. Woodruff argues, with respect to claim 31, that there is not simply an *overlap* in ranges, but a *difference* in ranges, since the McGill patent teaches a maximum CO concentration of 5%, while claim 31 requires a CO concentration of "more than 5%." We agree, however, with the Board that the disclosure in the McGill patent of a carbon monoxide concentration of "about 1-5%" does allow for concentrations slightly above 5%.

The actual time limitation of claims 27 and 31 is also met by McGill's disclosure. Claims 27 and 31 state that the vegetables should be maintained in the modified atmosphere "for a time sufficient to inhibit the visible growth of fungi." According to the examples given in Woodruff's specification, the time required to show whether or not there has been an inhibition of fungi on leafy and head vegetables is on the order of 6-19 days. As the Board found, the McGill patent discloses storing the vegetables in the modified atmosphere for 14 days "without substantial loss in appearance." Thus, the time taught by the McGill patent for storing vegetables in a modified atmosphere is within the range which Woodruff's disclosure indicates is "sufficient to inhibit the visible growth of fungi," or at least demonstrate inhibition.

Woodruff, however, maintains that the above language ("time sufficient to inhibit the visible growth of fungi") is not only a time limitation but is also a *purpose* limitation, i.e., the claim requires that one be intending to inhibit fungal growth when performing the claimed method step. Since, argues Woodruff, the prior art did not recognize the fungi-inhibiting property of Woodruff's method, the prior art could not render obvious a method having the purpose of inhibiting fungal growth.

[2] Judging from the evidence before us, Woodruff may have been the first to recognize the fungal-inhibiting benefit of the method. On the other hand, we do not agree that what Woodruff has allegedly discovered and claimed can be termed a new *purpose* for performing the claimed method. The generic purpose of the method disclosed in McGill is to prevent the *deterioration* of fresh vegetables, which certainly encompasses the specific benefit disclosed by Woodruff. While the McGill patent refers only to the effectiveness of the method against respiratory, bacterial, and enzymatic deterioration, Woodruff's disclosure that the method is *also* effective against fungi relates to but one other known cause of deterioration.

Therefore, there are two differences between the claimed invention and the prior art: one, the slightly different ranges of carbon monoxide concentration used in the modified atmosphere; and two, the newly disclosed *benefit* of inhibiting the growth of fungi. We are of the opinion that these differences do not render the claimed process patentable.

It is a general rule that merely discovering and claiming a new benefit of an *old* process cannot render the process again patentable. *Verdegaal Bros., Inc. v. Union Oil Co. of Calif.*, 814 F.2d 628, 632-33, 2 USPQ2d 1051, 1054 (Fed. Cir.), cert. denied, 484 U.S. 827 (1987); *Bird Provision Co. v. Owens Country Sausage, Inc.*, 568 F.2d 369, 375, 197 USPQ 134, 139 (5th Cir. 1978). While the processes encompassed by the claims are not entirely *old*, the rule is applicable here to the extent that the claims and the prior art overlap.

The cases of *In re Shetty*, 566 F.2d 81, 195 USPQ 753 (CCPA 1977) and *In re Marshall*, 578 F.2d 301, 198 USPQ 344 (CCPA 1978) do not, as urged by Woodruff, compel a contrary result. In both of these cases, the applicant had discovered a completely new use for either an old compound (*Marshall*) or an obvious compound (*Shetty*). In the present case, what Woodruff terms a "new use" (preventing fungal growth) is at least generically encompassed by the prior art purpose of preventing the deterioration of leafy and head vegetables.

Nor can patentability be found in the difference in carbon monoxide ranges recited in the claims. The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims. See, e.g., *Gardner v. TEC Sys., Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir.), cert. denied, 469 U.S. 830 [225 USPQ 232] (1984); *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980); *In re Ornitz*, 351 F.2d 1013, 147 USPQ 283 (CCPA 1965); *In re Aller*, 220 F.2d 454, 105 USPQ 233 (CCPA 1955). These cases have consistently held that in such a situation, the applicant must show that the particular range is *critical*, generally by showing that the claimed range achieves unexpected results relative to the prior art range. *Gardner*, 725 F.2d at 1349, 220 USPQ at 786 (obviousness determina

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tion affirmed because dimensional limitations in claims did not specify a device which performed and operated differently from the prior art); *Boesch*, 617 F.2d at 276, 205 USPQ at 219; *Ornitz*, 351 F.2d at 1016-17, 147 USPQ at 286; *Aller*, 220 F.2d at 456, 105 USPQ at 235. Woodruff has

made no such showing in the present case. The only test results presented by Woodruff are the results reported by Mr. Bell, comparing Woodruff's claimed invention to the *commercial embodiment* of McGill's method. While Woodruff's invention certainly showed superior fungi-inhibiting effect in these tests, the critical comparison is not with the commercial embodiment of McGill's invention, but with the method taught in his patent. According to Mr. Bell's declaration, the carbon monoxide concentration in the test group representing the commercial embodiment of McGill's invention was allowed to drop to 0% after 4 days. The McGill patent does not teach allowing the concentrations of any of the gases to fall out of the suggested ranges.

CONCLUSION

In the absence of adequate evidence showing that ranges of carbon monoxide concentration recited in claims 27-34 are critical, the Board correctly affirmed the rejection of the claims under 35 U.S.C. §103.

AFFIRMED

Footnotes

Footnote 1. TransFRESH Corp. is the assignee of both Woodruff's application and of the now-expired McGill patent.

- End of Case -